

REMARKS

Claims 1 and 9 have been amended to incorporate therein the recitation of claims 29 and 31, respectively. Claims 29 and 31 have been canceled. Claims 30 and 32 have been amended to conform to the amendments to claims 1 and 9. Entry of the amendments is respectfully requested as placing this case in condition for allowance.

Review and reconsideration on the merits are requested.

Claims 1, 4-8, 15, 25 and 27 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,720,276 to Kobatake et al. Claims 9-10, 12, 14, 16, 24, 26 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobatake et al. in view of U.S. Patent 6,123,074 to Hete et al. Claims 17, 19 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobatake et al. in view of U.S. Patent 6,237,594 to Davenport. Claims 8, 20 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobatake et al. in view of Hete et al., further in view of Davenport. The grounds for rejection remain the same as set forth in the previous Office Action.

In response, independent claims 1 and 9 have been amended to incorporate therein the recitation of claims 29 and 31, to recite that the breath detection port is provided separately from the oxygen outlet, to thereby obviate the foregoing rejections. Withdrawal is respectfully requested.

Claims 29 and 30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobatake et al. in view of U.S. Patent 6,394,088 to Frye et al. Claims 31 and 32 were rejected

under 35 U.S.C. § 102(a) as being unpatentable over Kobatake et al. in view of Hete et al., further in view of Frye et al.

The Examiner relied on Frye et al. as disclosing an oxygen delivery system having an oxygen outlet (34) and a separate breath detection port (36), which breath detection port is said to convey and transmit the pressure conditions induced during the patient's breathing. Frye et al. was further cited as disclosing that the breath detection port is provided separately from the oxygen outlet to help retain a sensing diaphragm in a closed position in response to a lack of inhalation by a patient during exhalation, citing col. 10, lines 15-40.

The reason for rejection was that it would have been obvious to provide a breath detection port separate from the oxygen outlet in order to control the amount of oxygen a patient receives during inhalation and exhalation.

Applicants traverse, and respectfully request the Examiner to reconsider in view of the amendments to claims and the following remarks.

As noted by the Examiner, the oxygen-delivery system of Frye et al. includes a diaphragm which is caused to move to a flow-delivery position in response to inhalation of a patient into a flow-blocking position in response to a lack of inhalation by the patient.

As described in Kobatake et al., the pressure within conduit 18 is detected by pressure sensor 34. The time differential value of the pressure ΔP is determined. If ΔP is positive, the expiration phase is detected and the routine goes to S68. On the hand, if ΔP is zero or negative, the inspiration phase is detected and the routine goes to step S74. During the expiration phase, the shut-off valve 32 separates the nasal cannula 36 from the oxygen source 12 to prevent the

supply of the respiratory gas (column 7, lines 3-18 and Fig. 7A). As shown in Fig. 1, nasal cannula is of a well known type including a pair of discharge ports 36a and 36b to insure the supply of respiration gas to the patient (column 5, lines 8-13). Thus, Kobatake et al. employs a simple, single conduit 18, pressure sensor 34 downstream of valve 32 and a typically used nasal cannula 36.

On the other hand, although employing what would appear to be an oxygen outlet 34 separate from sensor port 36, Frye et al. also needs a complex nasal delivery structure 32 to operate his apparatus. Particularly, as shown in Fig. 17 of Frye et al., sensor tubes 190 located within delivery tubes 182 are coupled to sensor port 36 via breath sensor tube 30 and branch legs 186 and 188, whereas gas delivery tubes 182 are connected to oxygen outlet 34 via gas supply tube 28 and branch legs 176 and 178.

The Examiner considered that it would have been obvious to employ a breath detection port separate from the oxygen outlet, as taught by Frye et al., in the apparatus of Kobatake et al., in order to control the amount of oxygen a patient receives during inhalation and exhalation. However, the proposed modification would considerably complicate the in-line structure shown in Fig. 3 of Kobatake et al., and would require one of ordinary skill to substitute the complex nasal delivery structure 32 of Frye et al. for the nasal cannula 36 of Kobatake et al. "of a well known type and [is] available on the market". Thus, it is respectfully submitted that one of ordinary skill would not be led to employ the nasal delivery structure 32 of Frye et al. including a breath detection port provided separately from the oxygen outlet to the apparatus of Kobatake et al.

Applicants further comment on separate patentability of independent claim 9 as follows.

In addition to reciting that the breath detection port is provided separately from the oxygen outlet, claim 9 further calls for supplying oxygen-enriched gas at a second flow rate during exhalation. On the other hand, in Frye et al, the oxygen supply is shut-off during the exhalation period. Thus, for this additional reason, it is respectfully submitted that one of ordinary skill would not combine the cited references in the manner suggested by the Examiner, and that the resulting combination would not achieve at least the invention of present claim 9.

Withdrawal of the foregoing rejections, and allowance of claims 1, 4-10, 12, 14-22, 24-28, 30 and 32 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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